

Claims

We claim:

1. In a general purpose computer system comprising:
 - a central processing unit,
 - dynamic memory,
 - static memory,
 - a display device,
 - an input device,
 - an output device
 - a mass storage device which contains
 - a number of historical medical provider patient billing records identifiable as patient records,
 - a grouping of diagnosis codes,
 - a grouping of qualifying circumstance codes,
 - a grouping of staging indicators,
 - a grouping of preventive codes,
 - a grouping of complication codes,
- a method for generating a medical provider profile comprising the steps of:
 - (a) selecting a diagnosis code,
 - (b) reading a plurality of patient records from the mass storage device into the dynamic memory, each of said patient records having said selected diagnosis code and

1 all of said patient records read corresponding to a single
2 patient,

3 (c) comparing each of said read patient records
4 with each qualifying circumstance code in the grouping of
5 qualifying circumstance codes,

6 (d) re-sorting each of said patient records
7 having a qualifying circumstance,

8 (e) reading a staging indicator corresponding to
9 said selected diagnosis code into dynamic memory,

10 (f) creating a grouping of said selected
11 diagnosis code with each code in the grouping of related
12 diagnoses codes which correspond to said selected diagnosis
13 code thereby creating a grouping of related codes,

14 (g) searching said plurality of read patient
15 records for the record containing the earliest date on which
16 said selected diagnosis code occurs and noting said date as
17 a first occurrence date,

18 (h) for each read patient record corresponding to
19 a code in said grouping of related codes, rejecting said
20 read patient record if a comparison of each of said read
21 patient records with said staging indicator and said first
22 occurrence date shows that for any read patient record, the
23 date of a read patient record predates said first occurrence
24 date by a period of time that exceeds said staging
25 indicator,

26 (i) for each read patient record corresponding to
27 a code in said grouping of related codes, rejecting said

1 read patient record if a comparison of each of said read
2 patient record with said staging indicator and said first
3 occurrence date shows that for any read patient record, the
4 date of a read patient record postdates said first
5 occurrence date by a period of time that exceeds said
6 staging indicator,

7 (j) for each read patient record not rejected in
8 steps (a) through (i) above, rejecting said record if said
9 selected diagnosis code does not appear on at least two
10 separate dates on said record,

11 (k) for each read patient record not rejected in
12 steps (a) through (j) above, writing said record into a
13 parameter table to create a profile for said selected
14 diagnosis.

15
16 2. In a general purpose computer system comprising:

17 a central processing unit,

18 dynamic memory,

19 static memory,

20 a display device,

21 an input device,

22 an output device

23 a mass storage device which contains

24 a grouping of medical provider profiles,

25 a method for utilizing a medical provider profile comprising the
26 steps of:

1 (a) selecting a medical provider profile having a
2 plurality of parameters,

3 (b) receiving a medical claim that includes a
4 diagnosis and

5 (c) comparing said medical claim diagnosis to
6 said medical provider profile to determine whether said
7 medical claims falls within the parameters of said profile.
8

9 3. A system for establishing medical provider profiles, the
10 system comprising:

11 (a) means for receiving a quantity of historical
12 medical provider patient billing records identifiable as
13 patient records,

14 (b) a grouping of diagnosis codes,

15 (c) a grouping of qualifying circumstances,

16 (d) a grouping of staging indicators,

17 (e) a grouping of preventive codes,

18 (f) a grouping of complication codes,

19 (g) means for selecting a diagnosis code,

20 (h) means for organizing a grouping of patient
21 records, each of said organized patient records having a
22 selected diagnosis code and all of said organized patient
23 records corresponding to a single patient,

24 (i) means for comparing each of said organized
25 patient records with each qualifying circumstance,

26 (j) means for rejecting each of said patient
27 records having a qualifying circumstance,

1 (k) means for reading a staging indicator
2 corresponding to said selected diagnosis code into dynamic
3 memory,

4 (l) means for creating a grouping of said
5 selected diagnosis code with each code in a grouping of
6 qualifying circumstance codes which corresponds to said
7 selected diagnosis code thereby creating a grouping of
8 related codes,

9 (m) means for searching said plurality of read
10 patient records for the record containing the earliest date
11 on which said selected diagnosis code occurs and noting said
12 date as a first occurrence date,

13 (n) for each read patient record corresponding to
14 a code in said grouping of related codes, means for
15 rejecting said read patient record if a comparison of each
16 of said read patient records with said staging indicator and
17 said first occurrence date shows that for any read patient
18 record, the date of a read patient record predates said
19 first occurrence date by a period of time that exceeds said
20 staging indicator,

21 (o) for each read patient record corresponding to
22 a code in said grouping of related codes, means for
23 rejecting said read patient record if a comparison of each
24 of said read patient record with said staging indicator and
25 said first occurrence date shows that for any read patient
26 record, the date of a read patient record postdates said

1 first occurrence date by a period of time that exceeds said
2 staging indicator,

3 (p) for each read patient record not rejected in
4 steps (a) through (o) above, means for rejecting said record
5 if said selected diagnosis code does not appear on at least
6 two separate dates on said record,

7 (q) for each read patient record not rejected in
8 steps (a) through (p) above, means for writing said record
9 into a parameter table to create a profile for said selected
10 diagnosis.

11
12 4. In a general purpose computer system comprising:

13 a central processing unit,

14 dynamic memory, and

15 a mass storage device,

16 a method for establishing a medical provider profile comprising
17 the steps of:

18 (a) receiving a number of medical provider
19 billing records,

20 (b) selecting a general diagnosis code,

21 (c) selecting a patient record that contains said
22 diagnosis code from said medical provider billing records,

23 (d) comparing said patient record with a
24 qualifying circumstance table and rejecting said patient
25 record if it contains a qualifying circumstance code,

1 (e) selecting from a table containing specific
2 diagnosis codes all specific diagnosis codes related to said
3 general diagnosis code,

4 (f) selecting from a table containing preventive
5 codes all preventive codes related to said general diagnosis
6 code,

7 (g) selecting from a table containing aftermath
8 codes all aftermath codes related to said general diagnosis
9 code,

10 (h) grouping said general diagnosis code, said
11 selected specific diagnosis codes, said selected preventive
12 diagnosis codes, and said selected aftermath codes into a
13 group of related codes,

14 (i) assigning said patient record with a staging
15 indicator associated with said general diagnosis code,

16 (j) determining a first occurrence of said
17 general diagnosis code in said patient record,

18 (k) rejecting said patient record if a comparison
19 of the date of each occurrence of a code in said group of
20 related codes with said first occurrence date shows that an
21 occurrence of a code in said group of related codes has a
22 date that predates the first occurrence date by more than a
23 period of time indicated by said staging indicator,

24 (l) rejecting said patient record if a comparison
25 of the date of each occurrence of a code in said group of
26 related codes with said first occurrence date shows that an
27 occurrence of a code in said group of related codes has a

1 date that postdates the first occurrence date by more than a
2 period of time indicated by said staging indicator,

3 (m) rejecting said patient record if said
4 diagnosis code appears in said patient record on no more
5 than a single date,

6 (n) if said patient record has not been rejected,
7 entering it into a parameter database.

8
9 5. A method for analyzing a healthcare provider billing
10 patterns comprising the steps of:

11 (a) obtaining a base data set of medical provider billing
12 information,

13 (b) verifying base data contained in said base data set,
14 said verifying step including identifying the existence of errors
15 in said base data,

16 (c) correcting errors identified during said verifying
17 step,

18 (d) obtaining a healthcare provider billing data set,

19 (e) comparing said healthcare provider billing data with
20 said base data, and

21 (f) generating a report which describes a relationship
22 between said healthcare provider billing data and said base data.

23
24 6. A method as recited in claim 5, wherein said step of
25 obtaining a base data set of medical provider billing information
26 further comprises:

27 (i) obtaining an existing data set comprising:

1 national profiles and
2 regional profiles,

3 (ii) building a base data set comprising patient records
4 comprising:

5 line items,
6 identifying codes for reporting medical
7 services,

8 Index codes,
9 Dates of Service, and
10 Service Name,

11 (iii) determining a patient record from said base data set
12 of patient records for an episode of care extraction process, and

13 (iv) manipulating said patient record to extrapolate
14 desired information.
15

16 7. A method as recited in claim 5 wherein said base data
17 contained in said base data set comprises:

18 (i) a claims history that includes a plurality of line
19 items,

20 (ii) a plurality of description tables of data that
21 include

22 (1) a Identifying code for reporting a medical
23 service description table,

24 (2) a description table, and

25 (3) an disease classification description table,

26 (iii) checking said line items against said
27 Identifying code for reporting a medical service description table,

1 (iv) checking said line items against said
2 description table,

3 (v) checking said line items against said disease
4 classification description table,

5 (vi) counting invalid line items,

6 (vii) checking said line items against date of
7 service, said checking step comprising:

8 (1) expanding into separate line items any said
9 line items which contain "date of service from" and a "data of
10 service to" where the said two dates are not the same,

11 (2) dating said services with a unique date of
12 service beginning with said "date of service from" for first said
13 line item and ending with said "date of service to" for last said
14 line item, and

15 (viii) converting Identifying code for reporting a
16 medical service code formats to standard identifying code for
17 reporting a medical service code format.

18
19 8. A method as recited in claim 5, wherein said step of
20 correcting errors identified further comprises:

21 (a) detecting a duplicate line item among said line
22 items,

23 (b) editing said claims history line items,

24 (c) detecting a inappropriately billed service among said
25 services, and

26 (d) editing said inappropriately billed service.
27

1 9. A method as recited in claim 5, wherein said step of
2 comparing said healthcare provider billing data with said base
3 data further comprises:

4 (a) performing a data history search producing an
5 information set,

6 (b) accessing a plurality of parameter tables, said
7 parameter table comprising

8 (i) index codes, and

9 (ii) statistical criteria,

10 (c) comparing said information set against said index
11 codes,

12 (d) checking if said information set falls within a
13 defined statistical criteria,

14 (e) setting an indication if said information set falls
15 within said defined statistical criteria, and

16 (f) providing a variance alert describing differences
17 between said information set and said defined statistical
18 criteria.
19

20 10. A method as recited in claim 5, wherein said step of
21 generating a report which describes a relationship between said
22 healthcare provider billing data and said base data further
23 comprises:

24 (a) producing a comparison report comprising:

25 (i) a plurality of healthcare provider's utilization of
26 Identifying code for reporting a medical service codes,

27 (ii) a reference set of utilization profiles,

1 (iii) a plurality of healthcare provider's utilization
2 of disease classification codes,

3 (iv) a first comparison summary of said healthcare
4 provider's utilization of Identifying code for reporting a
5 medical service codes against said reference set of utilization
6 profiles, said first comparison summary comprising

- 7 (a) the number of said services,
8 (b) the frequency of said services,
9 (c) the chronological order of said services, and
10 (d) statistical information on said services,

11 comprising:

- 12 (1) the range,
13 (2) the mode, and
14 (3) the confidence interval,

15 (v) a second comparison summary of said healthcare
16 provider's utilization of disease classification codes against
17 said reference set of utilization profiles, said second
18 comparison summary comprising

- 19 (a) the number of said services,
20 (b) the frequency of said services,
21 (c) the chronological order of said services, and
22 (d) statistical information on said services,

23 comprising:

- 24 (1) the range,
25 (2) the mode, and
26 (3) the confidence interval,

27 (b) producing a provider practice profile report comprising:

1 (i) a summary of total Identifying code for reporting a
2 medical service utilization by said healthcare provider during a
3 specified time interval to provide a comparison against said
4 reference data, and

5 (ii) a summary of total disease classification code
6 utilization by said healthcare provider during a specified time
7 interval to provide a comparison against said reference data.
8

9 11. A method for analyzing a healthcare provider billing
10 patterns comprising the steps of:

11 (a) obtaining a base data set of medical provider billing
12 information,

13 (b) verifying base data contained in said base data set,
14 said verifying step including identifying errors in said base
15 data,

16 (c) correcting errors identified during said verifying
17 step,

18 (d) establishing an episode of care for a particular
19 medical event,

20 (e) obtaining a healthcare provider billing data set,

21 (f) comparing said healthcare provider billing data with
22 said base data,

23 (g) reviewing a patient medical history record contained
24 within said healthcare provider billing data set for the presence
25 of a specific medical procedure, and

26 (h) generating a report which describes a relationship
27 between said healthcare provider billing data and said base data.

1 12. A method as recited in claim 11,
2 wherein said step of obtaining a base data set of medical
3 provider billing information further comprises:

- 4 (i) obtaining a commercially available data set comprising:
5 national profiles, and
6 regional profiles,
7 (ii) building base data set comprising patient records
8 comprising:
9 line items,
10 Identifying code for reporting a medical
11 service codes,
12 Index codes,
13 Dates of Service, and
14 Service Name,
15 (iii) determining a patient record from said base data set
16 of patient records for an episode of care extraction process, and
17 (iv) manipulating said patient record to extrapolate
18 pertinent information to conform with procedure logic.
19

20 13. A method as recited in claim 11
21 wherein said step of verifying base data contained in said
22 base data set, further comprises:

- 23 (i) obtaining a claims history, said claims history
24 comprising a plurality of line items,
25 (ii) accessing a plurality of description tables of data,
26 aid description tables comprising:

(1) a table of Identifying codes for reporting a medical service description,

(2) a description table, and

(3) a disease classification description table,

(iii) checking said line items against said Identifying code for reporting a medical service description table to determine whether said line item is valid,

(iv) checking said line items against said description table to determine whether said line item is valid,

(v) checking said line items against said disease classification description table to determine whether said line item is valid,

(vi) counting invalid line items,

(vii) checking said line items against date of service, said date of service checking comprising:

(1) expanding into separate line items any said line items which contain "date of service from" and a "data of service to" where the said two dates are not the same,

(2) dating said services with a unique date of service beginning with said "date of service from" for first said line item and ending with said "date of service to" for last said line item, and

(viii) converting Identifying code for reporting a medical service code formats to standard Identifying code for reporting a medical service code format.

1 14. A method as recited in claim 11, wherein said step of
2 correcting identified errors further comprises:

3 (a) detecting a duplicate line item among said line
4 items,

5 (b) editing said claims history line items,

6 (c) detecting a inappropriately billed service among said
7 services, and

8 (d) editing said inappropriately billed services.
9

10 15. A method as recited in claim 11, wherein said step of
11 comparing said healthcare provider billing data with said base
12 data further comprises:

13 (a) performing a data history search to produce an
14 information set,

15 (b) accessing a plurality of parameter tables comprising

16 (i) index codes, and

17 (ii) statistical criteria,

18 (c) comparing said information set against said index
19 codes,

20 (d) checking if said information set falls within a
21 defined statistical criteria,

22 (e) setting an indication if said information set falls
23 within said defined statistical criteria, and

24 (f) providing a variance alert describing differences
25 between said information set and said defined statistical
26 criteria.
27

1 16. A method as recited in claim 11, wherein said step of
2 generating a report which describes a relationship between said
3 healthcare provider billing data and said base data further
4 comprises:

5 (a) producing a comparison report comprising:

6 (i) a plurality of healthcare provider's utilization of
7 Identifying code for reporting a medical service codes,

8 (ii) a reference set of utilization profiles,

9 (iii) a plurality of healthcare provider's utilization
10 of disease classification codes,

11 (iv) a comparison of said healthcare provider's
12 utilization of Identifying code for reporting a medical service
13 codes against said reference set of utilization profiles,
14 comprising:

15 (A) number of said services,

16 (B) frequency of said services,

17 (C) chronological order of said services, and

18 (D) statistical information on said services,

19 comprising:

20 (1) range,

21 (2) mode, and

22 (3) confidence interval,

23 (v) a comparison of said healthcare provider's
24 utilization of disease classification codes against said
25 reference set of utilization profiles, comprising:

26 (A) number of said services,

27 (B) frequency of said services,

1 (C) chronological order of said services, and
2 (D) statistical information on said services,
3 comprising:

- 4 (1) range,
5 (2) mode, and
6 (3) confidence interval,

7 (b) producing a provider practice profile report comprising:

8 (i) a summary of total Identifying code for reporting a
9 medical service utilization by said healthcare provider during a
10 specified time interval to provide a comparison against said
11 reference data, and

12 (ii) a summary of total disease classification code
13 utilization by said healthcare provider during a specified time
14 interval to provide a comparison against said reference data.

15
16 17. A method as recited in claim 11, wherein said step of
17 establishing an episode of care for a particular medical event
18 further comprises:

19 (a) identifying a plurality of medical conditions that
20 require a specific category procedure during a course of
21 treatment,

22 (b) identifying a plurality of medical conditions that have
23 a qualifying circumstance,

24 (c) identifying a plurality of interrelational index
25 tables,

26 (d) designating a particular index code,

1 (e) identifying a patient record with said index code on at
2 least two said dates of service,

3 (f) rejecting patient records with less than two
4 occurrences of said particular index code,

5 (g) searching said patient record for at least one
6 occurrence of the said specific category procedure in said
7 patient record,

8 (h) searching said patient record for at least one
9 occurrence of an qualifying circumstance,

10 (i) checking said patient records against said Index
11 Tables, to identify disease classification codes associated with
12 an index code,

13 (j) creating a temporary file based on combining said
14 disease classification codes that are associated with a given
15 said index code,

16 (k) checking a patient record identified as containing a
17 selected index code to find the first occurrence of said index
18 code,

19 (l) searching through said patient record backward in time
20 starting with said first occurrence of said index code for a
21 clear window,

22 (m) searching through said patient record forward in time
23 starting with said first occurrence of said index code for a
24 clear window,

25 (n) rejecting said patient record if no clear window is
26 found,

(o) establishing an Episode of Care if both said backward clear window and said forward clear windows are found,

(p) accessing a plurality of medical treatment patterns,

(q) sorting said base data set information from said patient records by plurality of treatment patterns,

(r) accessing a plurality of parameter tables,

(s) populating said parameter tables with said base data from all said episodes of care for each said index code to provide summary statistics, and

(t) sorting said parameter tables information chronologically, category and by said profile classes.

18. A method as recited in claim 11, wherein said step of reviewing a patient medical history record further comprises:

(a) accessing a plurality of parameter tables,

(b) choosing a disease classification description for review,

(c) accessing a disease classification description table,

(d) accessing said disease classification description table to verify said diagnosis code is valid,

(e) accessing said disease classification description table to verify said diagnosis code is an Index code,

(f) prompting for a search for said selected disease classification code to list what index codes it may be associated with, if said chosen diagnosis is not listed as an Index code,

(g) conducting a word search for the said diagnosis to the said disease classification codes in said Index code,

1 (h) accessing said parameter tables to display selected
2 profiles,

3 (i) choosing said profiles from one of said data sets, and

4 (j) accessing procedure description table and category
5 table to ascertain procedure description codes.

6
7 19. A method for analyzing a healthcare provider's billing
8 patterns comprising the steps of:

9 (a) obtaining a base data set of medical provider billing
10 information,

11 (b) verifying base data contained in said base data set,
12 said verifying step including identifying errors in said base
13 data,

14 (c) correcting errors identified during said verifying
15 step,

16 (d) establishing an episode of care for a particular
17 medical event,

18 (e) screening said base data set for medical records within
19 an episode of care,

20 (f) obtaining a healthcare provider billing data set,

21 (g) comparing said healthcare provider billing data with
22 said base data,

23 (h) reviewing a patient medical history record contained
24 within said healthcare provider billing data set for the presence
25 of a specific medical procedure, and

26 (i) generating a report which describes a relationship
27 between said healthcare provider billing data and said base data.

1 20. A method as recited in claim 19,
2 wherein said step of obtaining a base data set of medical
3 provider billing information further comprises:

4 (i) obtaining a commercially available data set
5 comprising:

6 national profiles, and
7 regional profiles,

8 (ii) building base data set comprising patient
9 records comprising:

10 line items,
11 Identifying code for reporting a medical
12 service codes,
13 Index codes,
14 Dates of Service, and
15 Service Name,

16 (iii) determining a patient record from said base
17 data set of patient records for an episode of care extraction
18 process, and

19 (iv) manipulating said patient record to
20 extrapolate pertinent information to conform with procedure
21 logic.

22
23 21. A method as recited in claim 19
24 wherein said step of verifying base data contained in said
25 base data set, further comprises:

26 (i) obtaining a claims history, said claims history
27 comprising a plurality of line items,

1 (ii) accessing a plurality of description tables of
2 data, said description tables comprising:

3 (1) a Identifying code for reporting a medical
4 service description table,

5 (2) a procedure description table, and

6 (3) an disease classification description table,

7 (iii) checking said line items against said
8 Identifying code for reporting a medical service description
9 table to determine whether said line item is valid,

10 (iv) checking said line items against said procedure
11 description table to determine whether said line item is valid,

12 (v) checking said line items against said disease
13 classification description table to determine whether said line
14 item is valid,

15 (vi) counting invalid line items,

16 (vii) checking said line items against date of
17 service, comprising:

18 (1) expanding into separate line items any said
19 line items which contain "date of service from" and a "data of
20 service to" where the said two dates are not the same,

21 (2) dating said services with a unique date of
22 service beginning with said "date of service from" for first said
23 line item and ending with said "date of service to" for last said
24 line item, and

25 (viii) converting Identifying code for reporting a
26 medical service code formats to standard Identifying code for
27 reporting a medical service code format.

1 22. A method as recited in claim 19, wherein said step of
2 correcting errors identified further comprises:

3 (a) detecting any possible duplicate line items among
4 said line items,

5 (b) editing said claims history line items,

6 (c) detecting any possible inappropriately billed
7 services among said services, and

8 (d) editing said inappropriately billed services.
9

10 23. A method as recited in claim 19, wherein said step of
11 comparing said healthcare provider billing data with said base
12 data further comprises:

13 (a) performing a data history search to produce an
14 information set,

15 (b) accessing a plurality of parameter tables comprising

16 (i) index codes, and

17 (ii) statistical criteria,

18 (c) comparing said information set against said index
19 codes,

20 (d) checking if said information set falls within a
21 defined statistical criteria,

22 (e) setting an indicator if said information set falls
23 within said defined statistical criteria, and

24 (f) providing a variance alert describing differences
25 between said information set and said defined statistical
26 criteria.
27

1 24. A method as recited in claim 19, wherein said step of
2 generating a report which describes a relationship between said
3 healthcare provider billing data and said base data further
4 comprises:

5 (a) generating a comparison report comprising:

6 (i) a plurality of healthcare provider's utilization of
7 Identifying code for reporting a medical service codes,

8 (ii) a reference set of utilization profiles,

9 (iii) a plurality of healthcare provider's utilization
10 of disease classification codes,

11 (iv) a comparison of said healthcare provider's
12 utilization of Identifying code for reporting a medical service
13 codes against said reference set of utilization profiles,
14 comprising

15 (A) number of said services,

16 (B) frequency of said services,

17 (C) chronological order of said services, and

18 (D) statistical information on said services,

19 comprising:

20 (1) range,

21 (2) mode, and

22 (3) confidence interval,

23 (v) a comparison of said healthcare provider's
24 utilization of disease classification codes against said
25 reference set of utilization profiles, comprising

26 (A) number of said services,

27 (B) frequency of said services,

1 (C) chronological order of said services, and
2 (D) statistical information on said services,
3 comprising:

- 4 (1) range,
5 (2) mode, and
6 (3) confidence interval,

7 (b) generating a provider practice profile report
8 comprising:

9 (i) a summary of total Identifying code for reporting a
10 medical service utilization by said healthcare provider during a
11 specified time interval to provide a comparison against said
12 reference data, and

13 (ii) a summary of total disease classification code
14 utilization by said healthcare provider during a specified time
15 interval to provide a comparison against said reference data.

16
17 25. A method as recited in claim 19, wherein said step of
18 establishing an episode of care for a particular medical event
19 further comprises:

20 (a) determining a plurality of medical conditions that
21 require a specific category procedure during the course of
22 treatment,

23 (b) determining a plurality of medical conditions that have
24 a Qualifying Circumstance,

25 (c) accessing a plurality of interrelational index tables,

26 (d) designating a particular index code,

(e) identifying a patient record with a particular index code on at least two said dates of service,

(f) rejecting patient records with less than two occurrences of the particular index code,

(g) searching said patient record for at least one occurrence of the a specific category procedure in said patient record,

(h) searching said patient record for at least one occurrence of a Qualifying Circumstance,

(i) checking said patient record against said Index Tables, to identify disease classification codes associated with the chosen said index code,

(j) creating a temporary file based on combining said disease classification codes that are associated with a given said index code,

(k) checking a patient record that has a selected said index code to find the first occurrence of said index code,

(l) searching through said patient record backward in time starting with said first occurrence of said index code for a clear window,

(m) searching through said patient record forward in time starting with said first occurrence of said index code for a clear window,

(n) rejecting said patient records if no clear window is found,

(o) establishing an Episode of Care if both said backward clear window and said forward clear windows are found,

(p) identifying a plurality of medical treatment patterns,
(q) sorting said base data set information from said
patient records by plurality of treatment patterns,
(r) accessing a plurality of parameter tables,
(s) populating said parameter tables with said base data
from all said episodes of care for each said index code to
provide summary statistics, and
(t) sorting said parameter tables information
chronologically, category and by said profile classes.

26. A method as recited in claim 19, wherein said step of
reviewing a patient medical history record further comprises:

(a) accessing a plurality of parameter tables,
(b) choosing a disease classification code for review,
(c) accessing said disease classification description table
to verify said diagnosis code is valid,
(d) accessing said disease classification description table
to verify said diagnosis code is an Index code,
(e) prompting for a search for said selected disease
classification code to list what index codes it may be associated
with, if said chosen diagnosis is not listed as an Index code,
(f) conducting a word search for the said diagnosis to the
said disease classification codes in said Index code,
(g) accessing said parameter tables to display selected
profiles,
(h) choosing source of said profiles from either said
commercially available data set or said base data set, and

1 (i) accessing procedure description table and category
2 table to ascertain description of procedure codes.
3

4 27. A method as recited in claim 19, wherein said step of
5 screening said base data set for medical records further
6 comprises:

7 (a) accessing a age/gender table,

8 (b) accessing a region statistic table,

9 (c) accessing a Zip/Region table,

10 (d) accessing a Identifying code for reporting a medical
11 service statistic table,

12 (e) accessing a specialty table,

13 (f) selecting said reference profiles,

14 (g) accessing said age/gender table to determine standard
15 age ranges and/or gender selection for said selected profile,

16 (h) accessing said region statistic table to determine
17 adjustments due to particular geographic regions for said
18 selected profile,

19 (i) accessing said Zip/Region table to identify what region
20 a particular geographic zip code falls within,

21 (j) accessing said Identifying code for reporting a medical
22 service Statistic table to identify what adjustments due to a
23 particular medical specialty, and

24 (k) accessing said Specialty table to determine what
25 particular specialty groupings are suggested.
26

1 28. A method for analyzing a healthcare provider's billing
2 patterns comprising the steps of:

3 (a) obtaining a base data set of medical provider billing
4 information,

5 (b) verifying base data contained in said base data set,
6 said verifying step including identifying the existence of errors
7 in said base data,

8 (c) correcting errors identified during said verifying
9 step,

10 (d) establishing an episode of care for a particular
11 medical event,

12 (e) accessing and reviewing said medical record database,
13 said accessing and reviewing comprising the steps of:

14 (i) establishing a plurality of criteria for searching
15 parameters,

16 (ii) indexing said records in such a way as they are
17 relationally related to each other, and

18 (iii) providing a format for the review of the
19 accessed records,

20 (f) screening said base data set for medical records within
21 an episode of care,

22 (g) obtaining a healthcare provider billing data set,

23 (h) comparing said healthcare provider billing data with
24 said base data,

25 (i) reviewing a patient medical history record contained
26 within said healthcare provider billing data set for the presence
27 of a specific medical procedure, and

1 (j) generating a report which describes a relationship
2 between said healthcare provider billing data and said base data.

3
4 29. A method as recited in claim 28,
5 wherein said step of obtaining a base data set of medical
6 provider billing information further comprises:

7 (i) obtaining a commercially available data set comprising:
8 national profiles, and
9 regional profiles,

10 (ii) building base data set comprising patient records
11 comprising:

12 line items,
13 Identifying code for reporting a medical service
14 codes,
15 Index codes,
16 Dates of Service, and
17 Service Name,

18 (iii) determining a patient record from said base data set
19 of patient records for an episode of care extraction process, and

20 (iv) manipulating said patient record to extrapolate
21 pertinent information to conform with procedure logic.

22
23 30. A method as recited in claim 28
24 wherein said step of verifying base data contained in said
25 base data set, further comprises:

26 (i) accessing a claims history comprising a plurality of
27 line items,

(ii) accessing a plurality of description tables comprising:

(1) a Identifying code for reporting a medical service description table, and

(2) an disease classification description table,
(iii) checking said line items against said Identifying code for reporting a medical service description table to determine whether said line item is valid,

(iv) checking said line items against said disease classification description table to determine whether said line item is valid,

(v) counting invalid line items,

(vii) checking said line items against date of service, comprising:

(1) expanding into separate line items any said line items which contain "date of service from" and a "data of service to" where the said two dates are not the same,

(2) dating said services with a unique date of service beginning with said "date of service from" for first said line item and ending with said "date of service to" for last said line item, and

(viii) converting Identifying code for reporting a medical service code formats to standard Identifying code for reporting a medical service code format.

31. A method as recited in claim 28, wherein said step of correcting errors identified further comprises:

1 (a) detecting possible duplicate line items among said
2 line items,

3 (b) editing said claims history line items,

4 (c) detecting possible inappropriately billed services
5 among said services, and

6 (d) editing said inappropriately billed services.
7

8 32. A method as recited in claim 28, wherein said step of
9 comparing said healthcare provider billing data with said base
10 data further comprises:

11 (a) performing a data history search and producing an
12 information set therefrom,

13 (b) accessing a plurality of parameter tables comprising

14 (i) index codes, and

15 (ii) statistical criteria,

16 (c) comparing said information set against said index
17 codes,

18 (d) checking if said information set falls within a
19 defined statistical criteria,

20 (e) setting an indication if said information set falls
21 within said defined statistical criteria, and

22 (f) providing a variance alert describing differences
23 between said information set and said defined statistical
24 criteria.
25

26 33. A method as recited in claim 28, wherein said step of
27 generating a report which describes a relationship between said

1 healthcare provider billing data and said base data further
2 comprises:

3 (a) compiling a comparison report comprising:

4 (i) a plurality of healthcare provider's utilization of
5 Identifying code for reporting a medical service codes,

6 (ii) a reference set of utilization profiles,

7 (iii) a plurality of healthcare provider's utilization
8 of disease classification codes,

9 (iv) a comparison of said healthcare provider's
10 utilization of Identifying code for reporting a medical service
11 codes against said reference set of utilization profiles,
12 comprising

13 (A) number of said services,

14 (B) frequency of said services,

15 (C) chronological order of said services, and

16 (D) statistical information on said services,

17 comprising:

18 (1) range,

19 (2) mode, and

20 (3) confidence interval,

21 (v) a comparison of said healthcare provider's
22 utilization of disease classification codes against said
23 reference set of utilization profiles, comprising

24 (A) number of said services,

25 (B) frequency of said services,

26 (C) chronological order of said services, and

1 (D) statistical information on said services,
2 comprising:

- 3 (1) range,
4 (2) mode, and
5 (3) confidence interval,

6 (b) compiling a provider practice profile report comprising:

7 (i) a summary of total Identifying code for reporting a
8 medical service utilization by said healthcare provider during a
9 specified time interval to provide a comparison against said
10 reference data, and

11 (ii) a summary of total disease classification code
12 utilization by said healthcare provider during a specified time
13 interval to provide a comparison against said reference data.
14

15 34. A method as recited in claim 28, wherein said step of
16 establishing an episode of care for a particular medical event
17 further comprises:

18 (a) designating a plurality of medical conditions that
19 require a specific category procedure during the course of
20 treatment,

21 (b) designating a plurality of medical conditions that have
22 a qualifying circumstance,

23 (c) accessing a plurality of interrelational index tables,

24 (d) designating a particular index code,

25 (e) identifying a patient record with said particular index
26 code on at least two said dates of service,

1 (f) rejecting patient records with less than two
2 occurrences of said particular index code,

3 (g) searching an identified patient record for at least one
4 occurrence of the said specific category procedure in said
5 patient record,

6 (h) searching said identified patient record for at least
7 one occurrence of said qualifying circumstance in said patient
8 record,

9 (i) checking patient records against said Index Tables, to
10 identify disease classification codes associated with the chosen
11 said index code,

12 (j) searching patient records for any qualifying
13 circumstance disease classification codes,

14 (k) creating a temporary file based on combining said
15 disease classification codes that are associated with a given
16 said index code,

17 (l) checking said patient record, identified as containing
18 selected said index code, over the entire said patient record to
19 find the first occurrence of said index code,

20 (m) searching through said patient record backward in time
21 starting with said first occurrence of said index code for a
22 clear window,

23 (n) searching through said patient record forward in time
24 starting with said first occurrence of said index code for a
25 clear window,

26 (o) rejecting said patient record if no clear window is
27 found,

1 (p) establishing an Episode of Care if both said backward
2 clear window and said forward clear windows are found,

3 (q) selecting a plurality of medical treatment patterns,

4 (r) sorting said base data set information from said
5 patient records by plurality of treatment patterns,

6 (s) a plurality of parameter tables,

7 (t) populating said parameter tables with said base data
8 from all said episodes of care for each said index code to
9 provide summary statistics, and

10 (u) sorting said parameter tables information
11 chronologically, category and by said profile classes.

12
13 35. A method as recited in claim 28, wherein said step of
14 reviewing a patient medical history record further comprises:

15 (a) accessing a plurality of parameter tables,

16 (b) choosing a disease classification code for review,

17 (c) accessing a disease classification description table,

18 (d) accessing said disease classification description table
19 to verify said diagnosis code is valid,

20 (e) accessing said disease classification description table
21 to verify said diagnosis code is an Index code,

22 (f) prompting for a search for said selected disease
23 classification code to list what index codes it may be associated
24 with, if said chosen diagnosis is not listed as an Index code,

25 (g) conducting a word search for the said diagnosis to the
26 said disease classification codes in said Index code,

1 (h) accessing said parameter tables to display selected
2 profiles,

3 (i) choosing source of said profiles from either said
4 commercially available data set or said base data set, and

5 (j) accessing procedure description table and category
6 table to ascertain description of procedure codes.

7
8 36. A method as recited in claim 28, wherein said step of
9 screening said base data set for medical records further
10 comprises:

11 (a) selecting reference profiles,

12 (b) accessing an age/gender table to determine standard age
13 ranges and/or gender selection for said selected profile,

14 (c) accessing a region statistic table to determine
15 adjustments due to particular geographic regions for said
16 selected profile,

17 (d) accessing a Zip/Region table to identify what region a
18 particular geographic zip code falls within,

19 (e) accessing an Identifying code for reporting a medical
20 service Statistic table to identify what adjustments due to a
21 particular medical specialty, and

22 (f) accessing a Specialty table to determine what
23 particular specialty groupings are suggested.

24
25 37. In a general purpose computer system comprising:
26 a central processing unit,
27 dynamic memory,

1 an input device,
2 an output device,
3 a display device, and
4 a mass storage device,
5 a method for analyzing a healthcare provider's billing
6 patterns comprising the steps of:

7 (a) storing a base data set of medical provider billing
8 information on the mass storage device,

9 (b) storing said healthcare provider's billing information
10 on the mass storage device,

11 (c) verifying said base data set to be used for comparison,
12 by retrieving said base data set information from mass storage
13 device, storing said base data set information in the dynamic
14 memory, and displaying said base data set information on the
15 display device,

16 (d) correcting errors discovered during said verification
17 process, by utilizing the input device to edit said displayed
18 base data set information,

19 (e) comparing said healthcare provider's billings with said
20 comparison data, by retrieving said healthcare provider's
21 billings from the mass storage device and storing in the dynamic
22 memory, retrieving said comparison data from mass storage and
23 storing in the dynamic memory, and performing a text field
24 comparison between the said two sets of data stored in dynamic
25 memory, and storing the result of the said comparison operation
26 into mass storage, and

~~Add B16~~

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